

**Education for What: The Rising Demand for Skill and  
the Decline of Manual Labor**

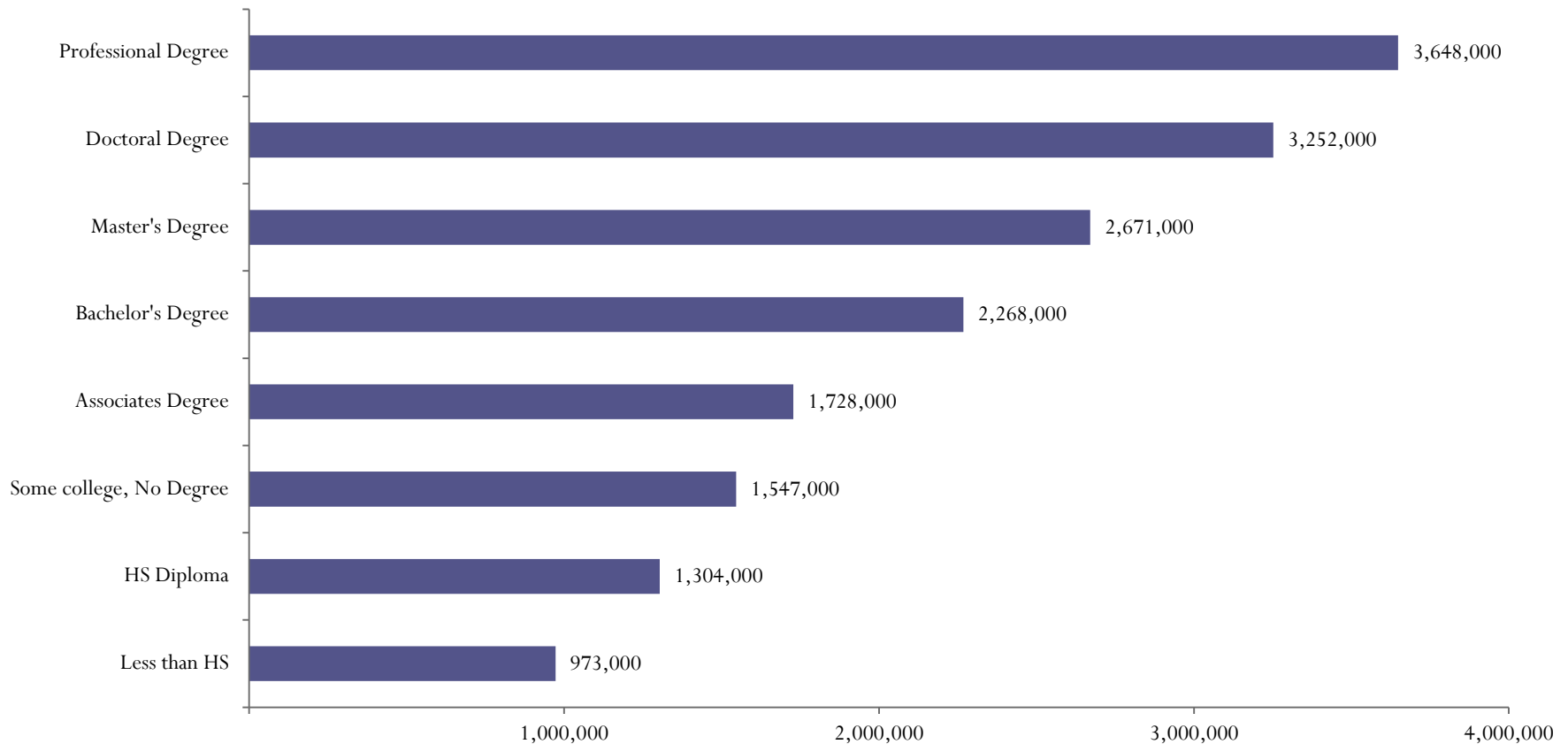
**Stephen J. Rose**

**Mayor's Working Group on Jobs, Benefits, and Wages**

**October 26, 2016**

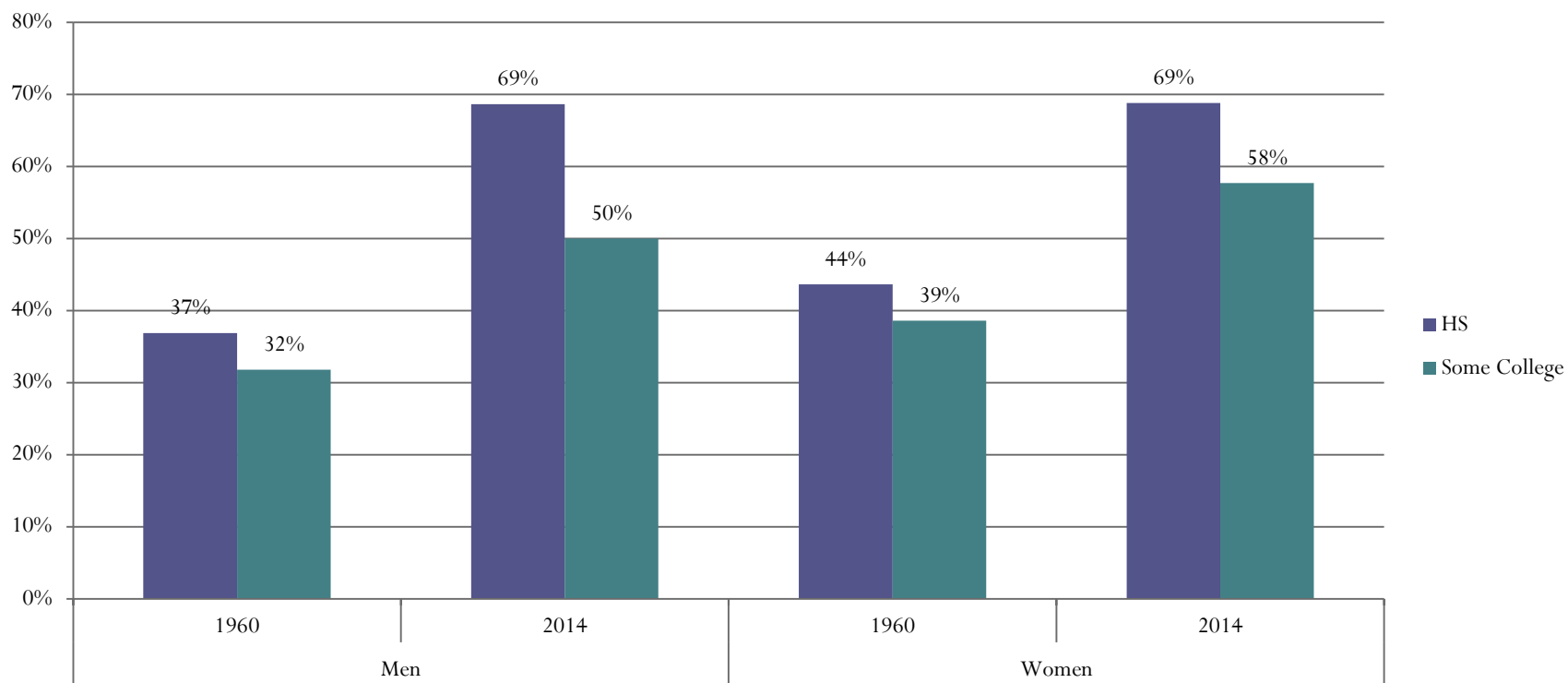
# More Education Results in Higher Earnings

**Lifetime Earnings by Highest Educational Attainment, 2009 Dollars**



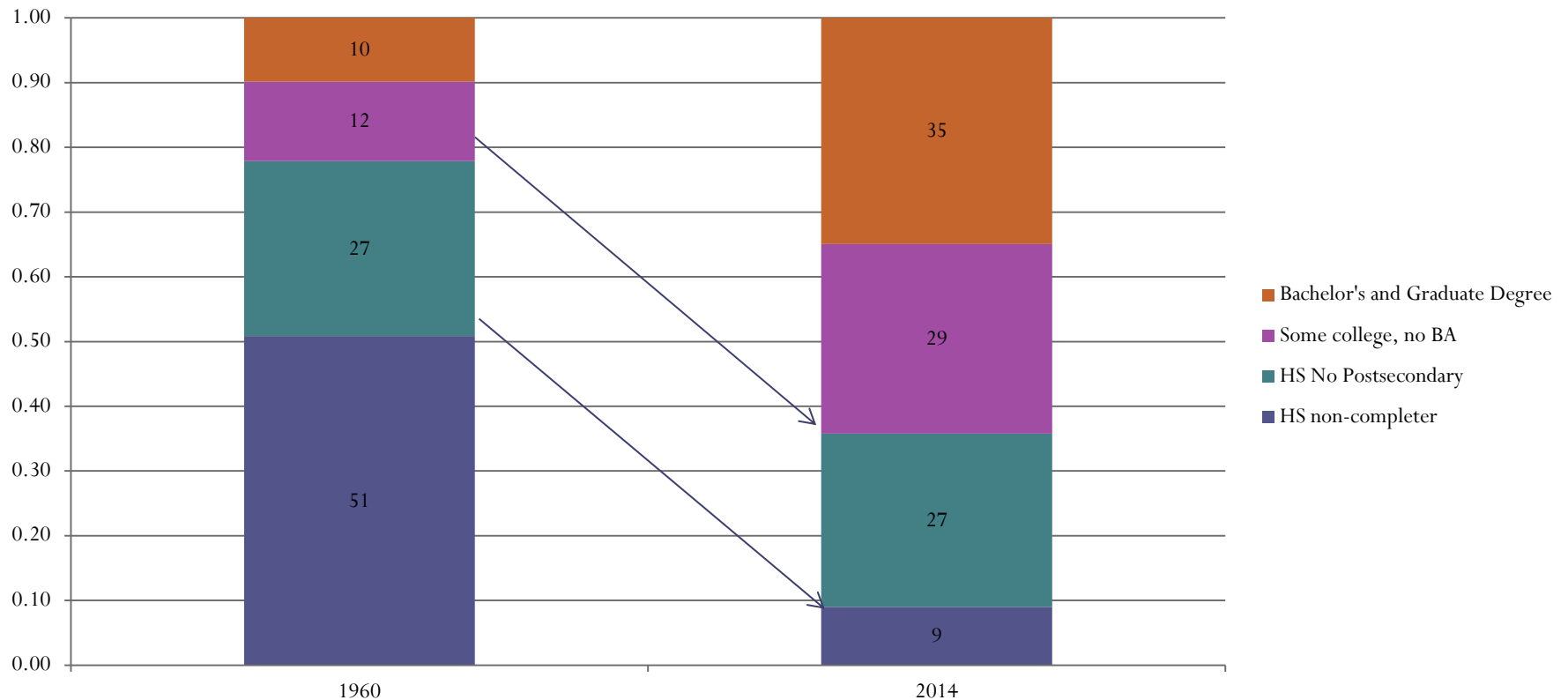
# Returns to Getting a BA Have Increased over Time

**How Much More Workers with a Bachelor's Degree Earned  
Relative to Those with Less Education, White Men and Women, 1960  
and 2014**



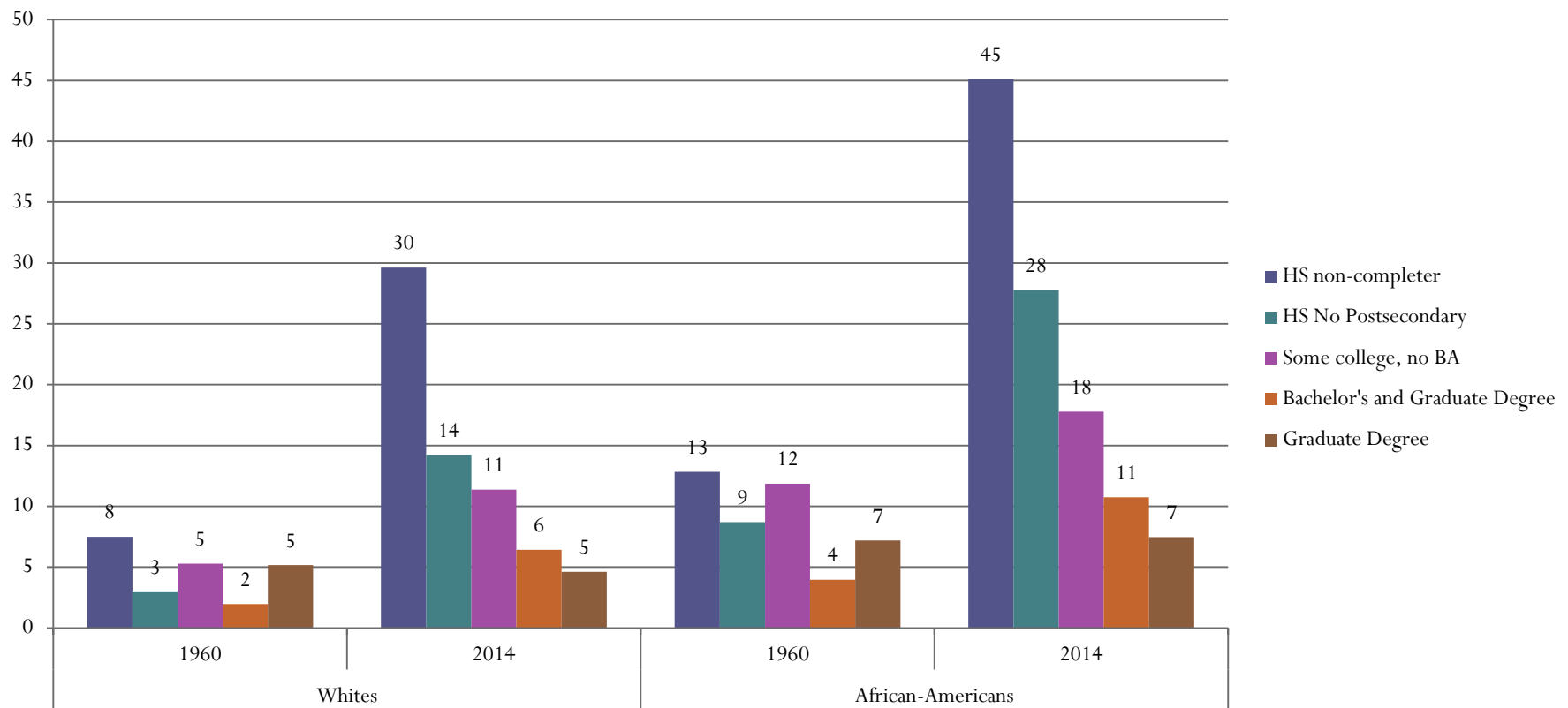
# Many More Adults Have At Least Some Post-Secondary Education

**Those with a HS Diploma Only Went from Being in the Third Quartile in 1960 to Being Mostly in the First Quartile in 2014**



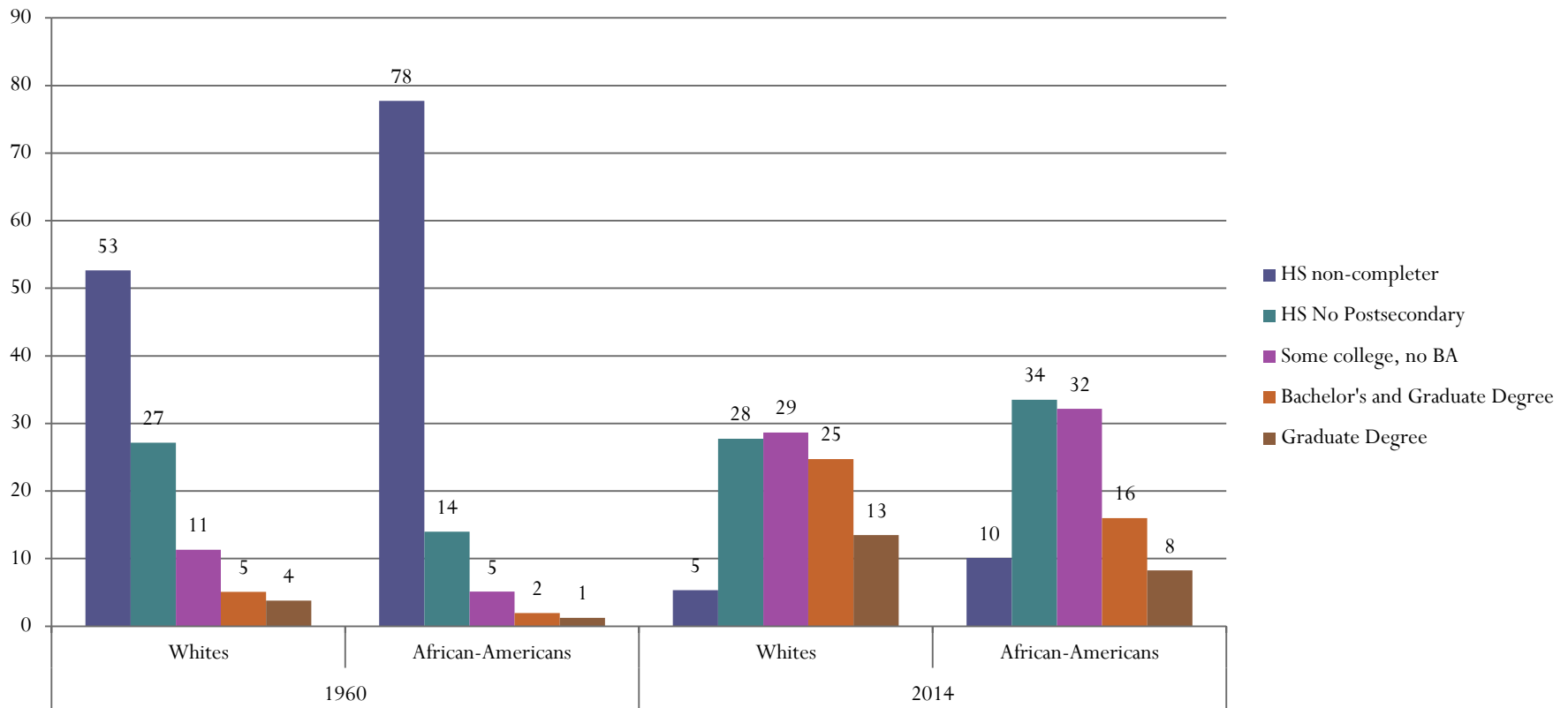
# Rising Number of Males Out of the Labor Force, Especially for Those without a College Degree

Share of Males Aged 23-59 Out of Labor Force, Whites and African-Americans, 1960 and 2010



# African-Americans Narrow Education Gap

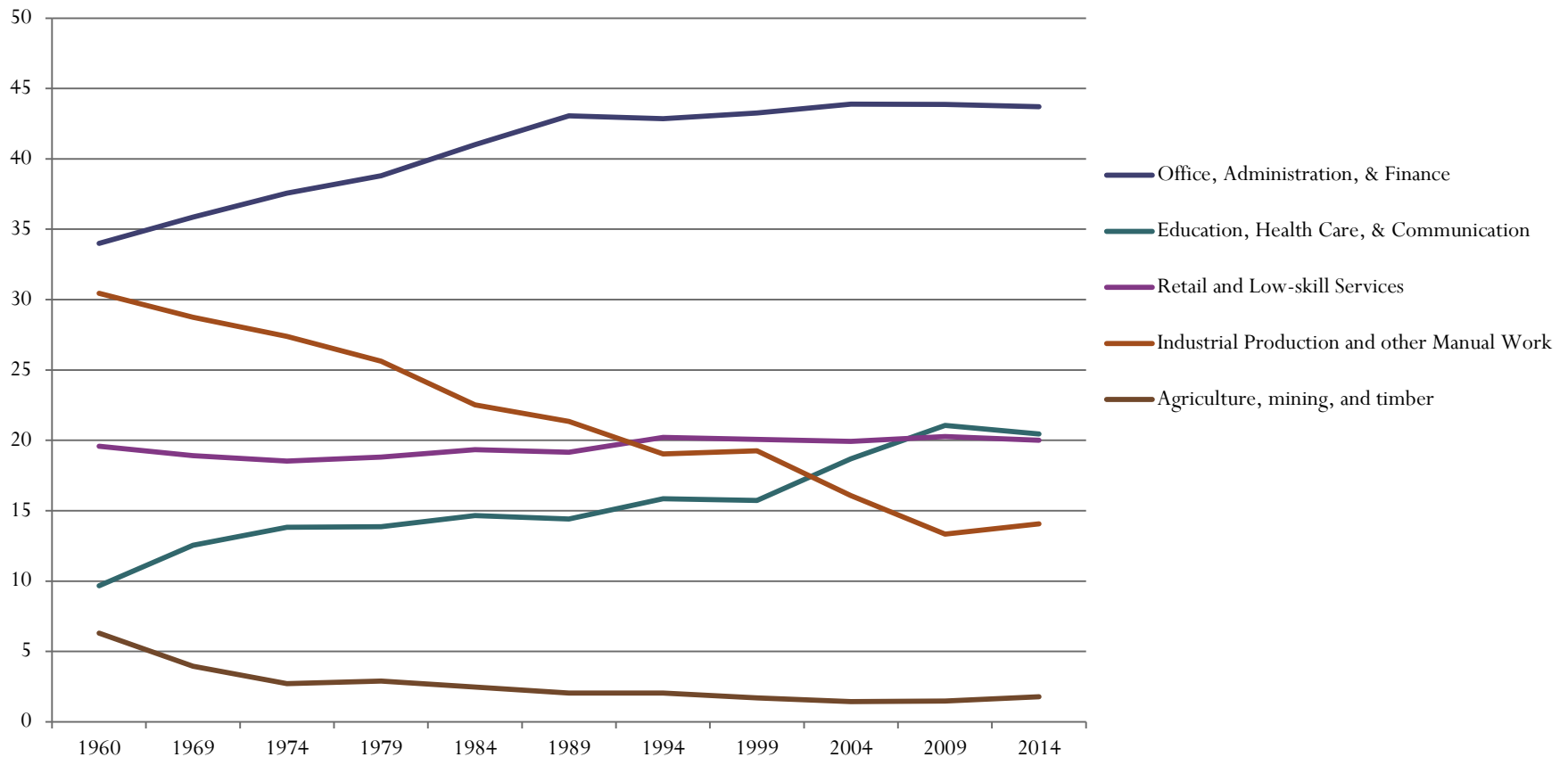
## Educational Attainment, Whites and African-Americans, 1960 and 2014



# The Economy Shifts Over Time

There has been a shifted from manufacturing to office work and high end services, areas that benefit more from greater skills associated with postsecondary education.

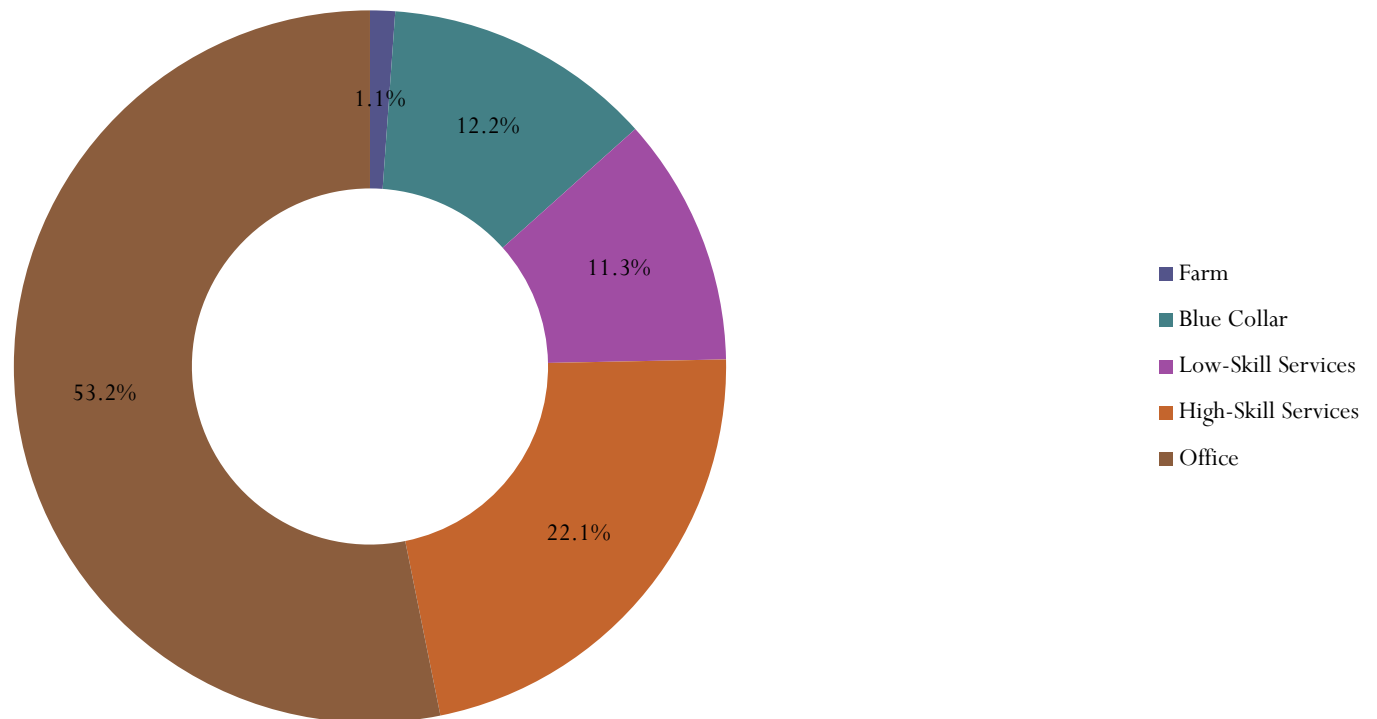
### Changing Nature of Employment, 1960-2014





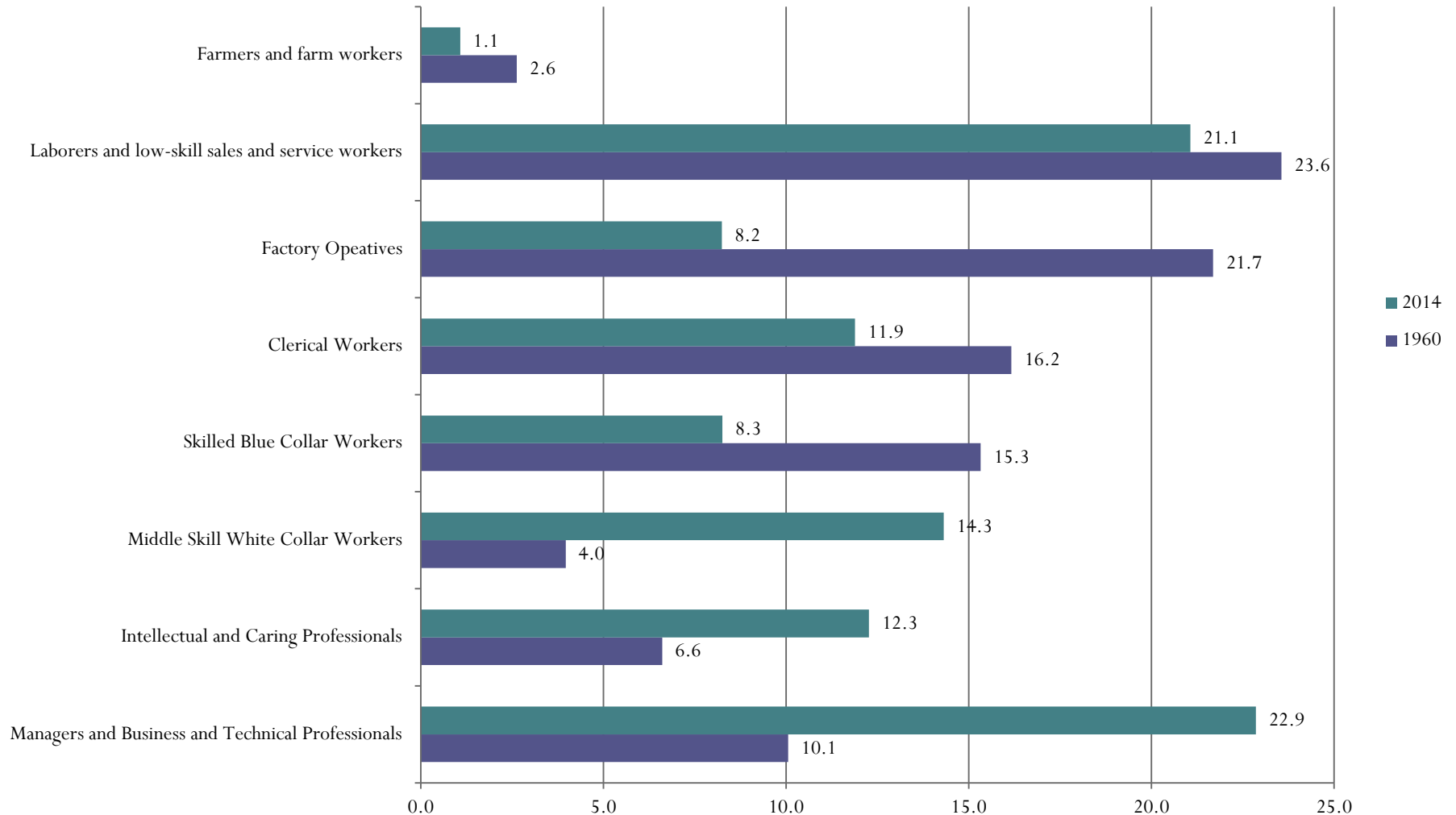
# 75% of Earnings Go to Office and High-Skill Workers

Share of Total Earnings by Functional Area, 2015



## Changing Occupational Distribution

# The Shift Away from Manual Jobs, 1960 to 2014



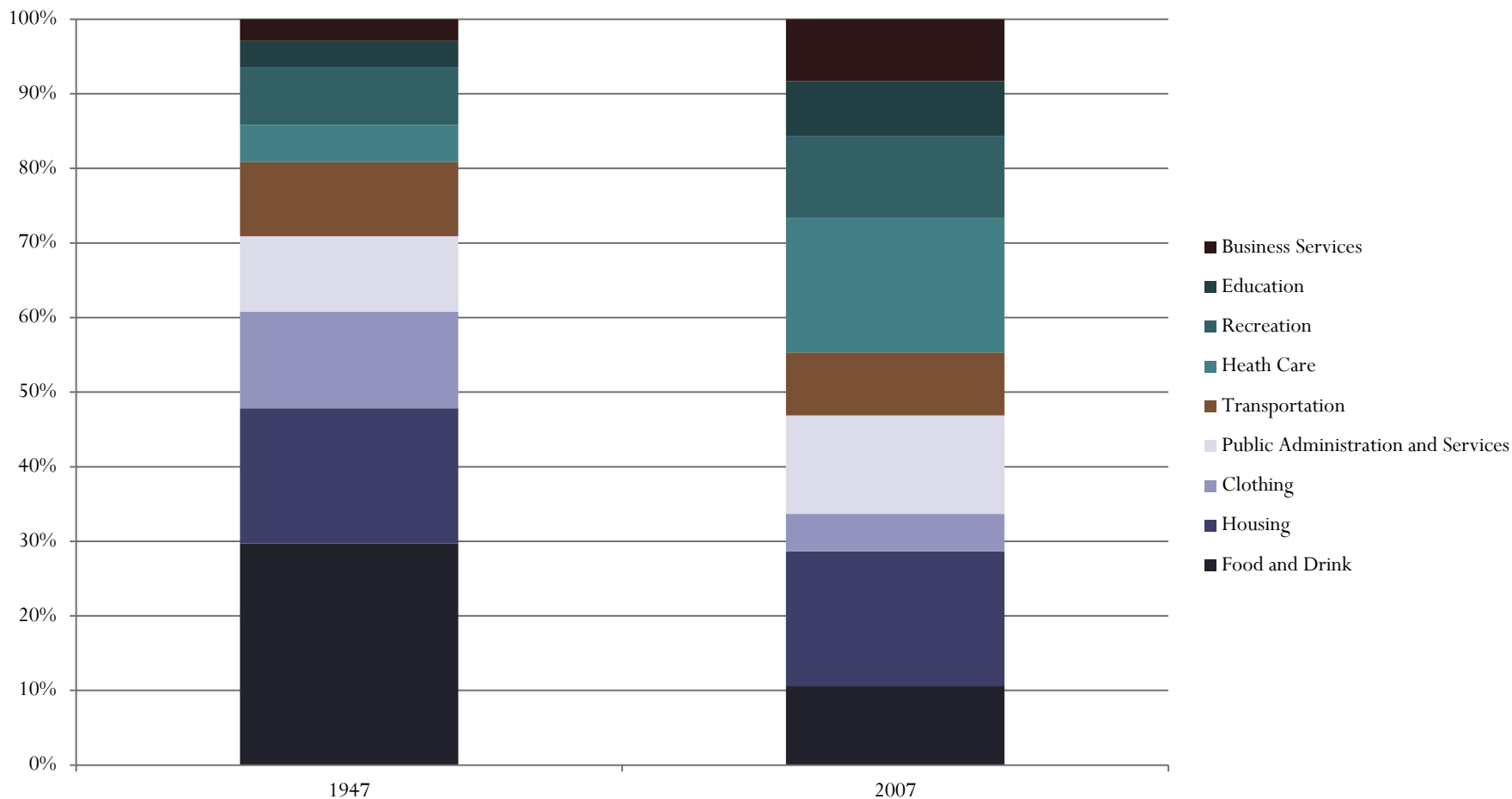
# Understanding Structural Change by Deconstructing Value Chains over Time

Using Input-Output Tables to show complete “value chains”--the direct and indirect inputs needed to produce final output.

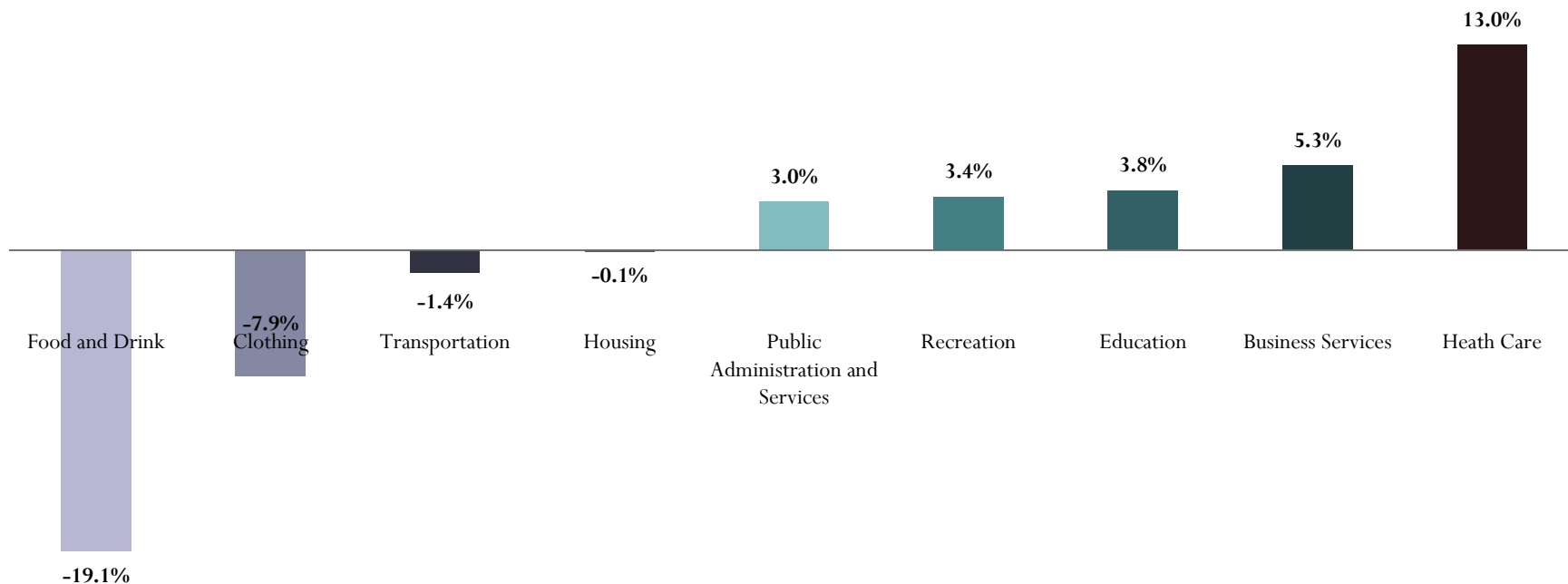
Technological change means that it takes a smaller share of our resources to produce common goods and services. For example, in 1947, food and clothing were 43% of what we consumed; the comparable figure in 2007 was 16%.

See “The Economy Goes to College,” Georgetown Center on Education and the Workforce.

# The Changing Composition of What We Consume, 1947 - 2007



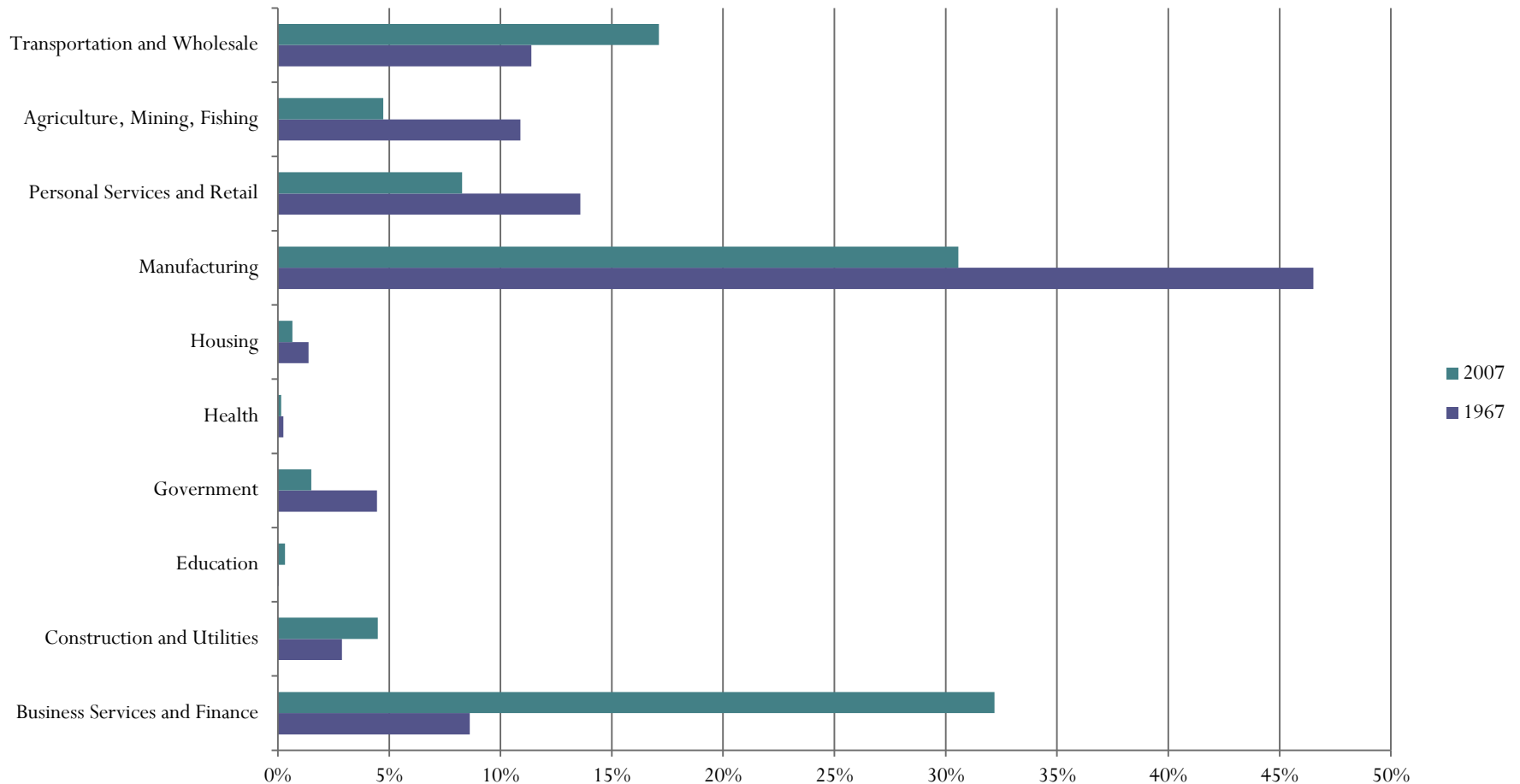
# Changing Shares by Type of Consumption, 1947-2007



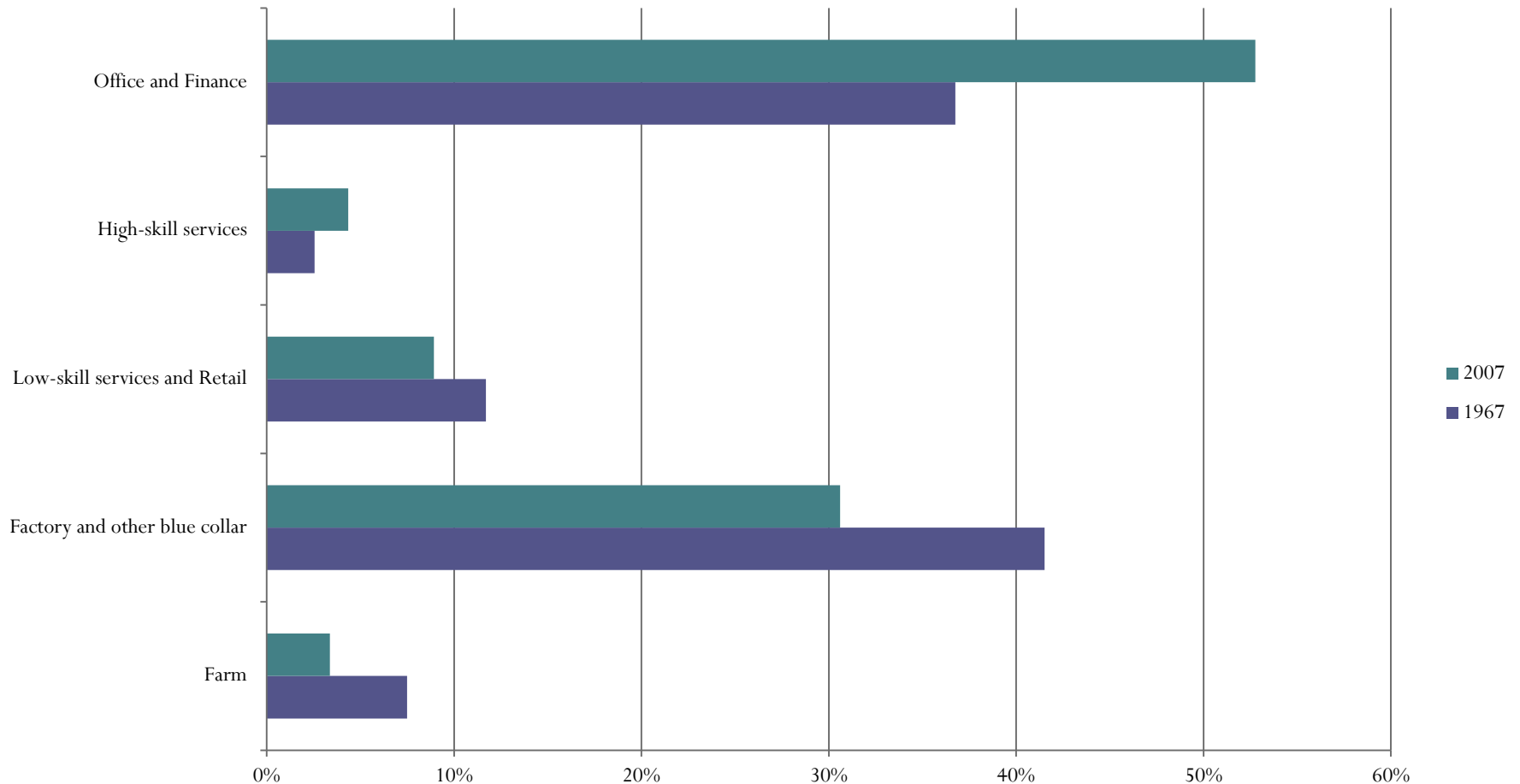
# Changes in Value of Industry Outputs, 1967-2007

	1967	2007	Change
Business Services & Finance	11.7%	26.3%	14.5%
Health Care	4.0%	7.3%	3.2%
Government	3.3%	6.0%	2.7%
Housing	10.4%	11.1%	0.7%
Construction & Utilities	7.4%	7.7%	0.4%
Education	3.9%	4.2%	0.3%
Personal Services & Retail	12.3%	11.0%	-1.3%
Agriculture & Mining	5.0%	2.8%	-2.2%
Transportation & Wholesale	12.0%	7.8%	-4.2%
Manufacturing	29.9%	15.9%	-14.1%

# Changing Industry Composition in Producing Exports, 1967 and 2007

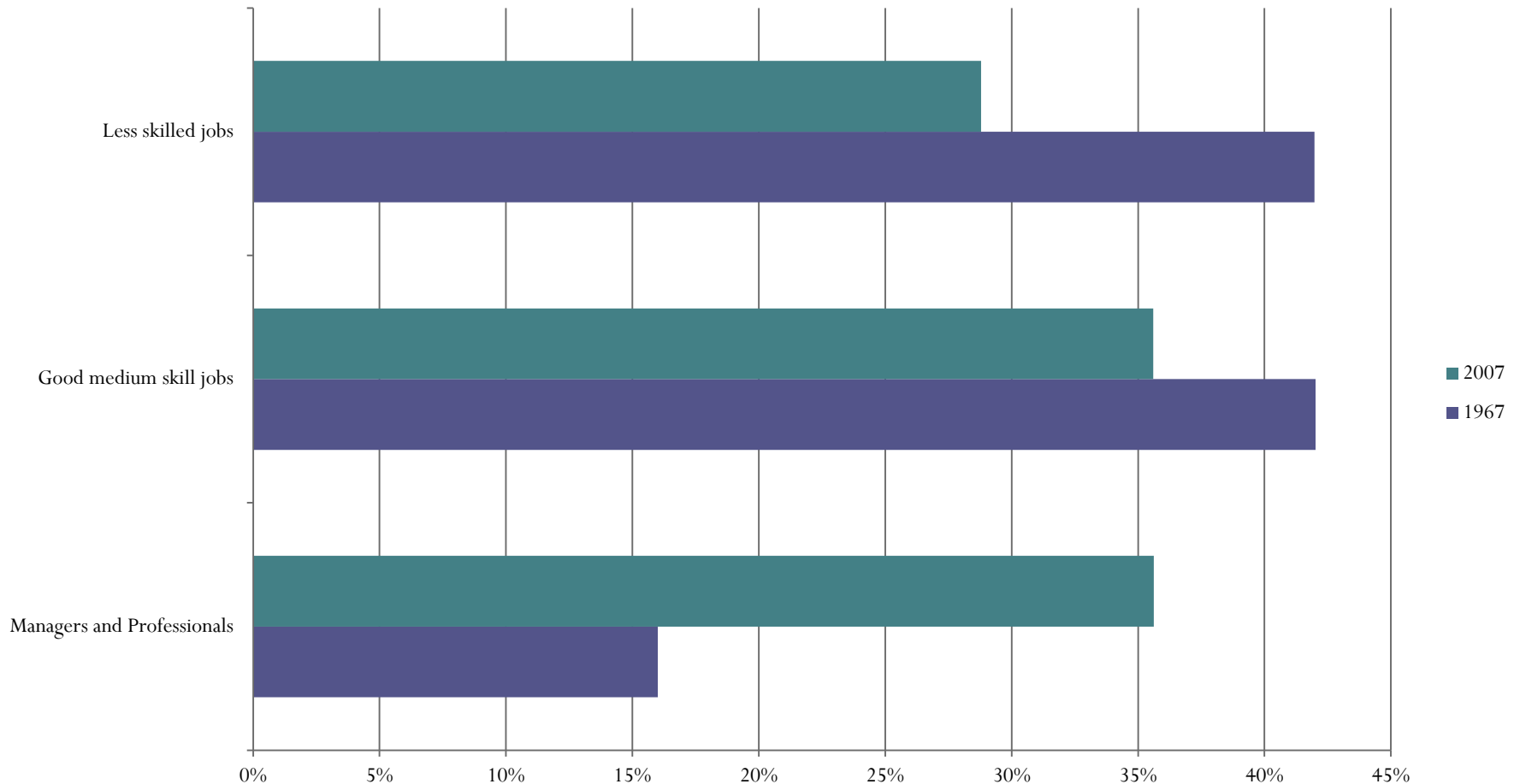


# Changing Functional Composition in Producing Exports, 1967-2007

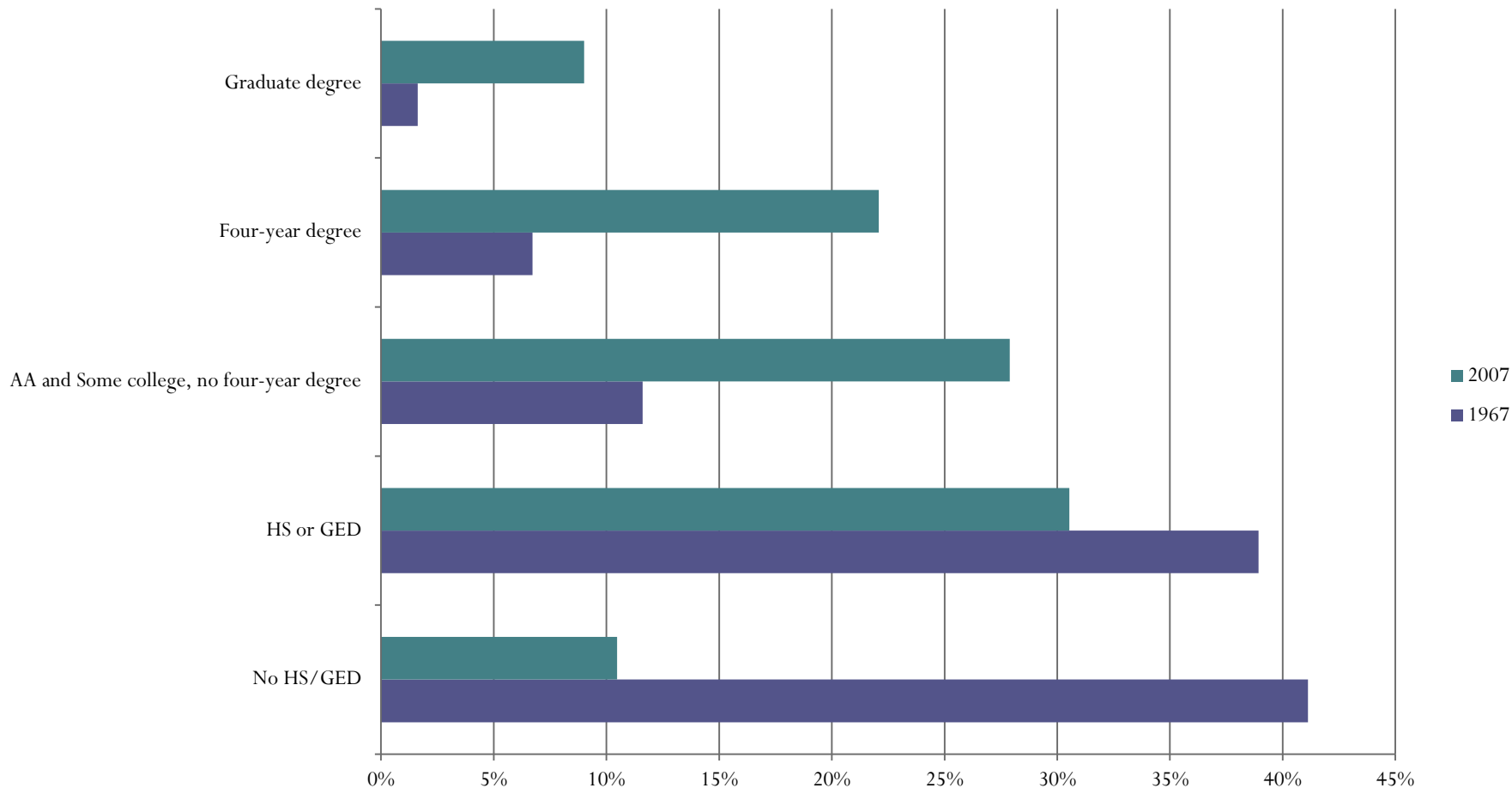




# Changing Occupational Composition in Producing Exports, 1967-2007



# Changing Educational Composition in Producing Exports, 1967-2007



# Triple Whammy for Manual Workers

- First, final output has shifted from goods production (food, clothing, transportation) to services (health care, business services, and education).
- Second, within each activity, the industrial share of raw material and manufacturing industries needed to produce final output has declined: e.g., in 1967, 26% of the value of food and drink came from farming and food manufacturing industries; in 2007, the comparable figure was 13%.
- Third, within manufacturing industries (and all other industries), the share of production workers out of total employment has declined.